25(2)   SOV/117-59-5-15/30

AUTHOR: Seminskiy, V.K.

TITLE: A Copying Device for Working Profiled and Spherical Surfaces

PERIODICAL: Mashinostroitel', 1959, Nr 5, pp 26-27 (USSR)

ABSTRACT: The subject device, developed by the author, includes a tracer
               (Kopir) with an inserted adjusting screw. When the tracer
               reaches the stop on its way, a ball-bearing-mounted roller
               slides over the tracer, and the cutting tool starts cutting
               the work contour. The loosely-rotating 4 mm diameter roller
               easily passes from one curve of the tracer to the other. Its
               small radius permits the machining of complex surfaces. There
               is 1 diagram.

Card 1/1

25(2)   SOV/117-59-11-10/35

AUTHOR: Seminskiy, V.K.

TITLE: Lathe Attachments for Machining Complex Surfaces

PERIODICAL: Mashinostroitel', 1959, Nr 11, pp 15 - 17 (USSR)

ABSTRACT: The article gives detailed design and operational infor-
             mation on three lathe attachments for machining parts
             of complex shape, designed and introduced into use by
             the author. The first attachment (Figure 1) is for
             the finish-turning of spherical parts. It works with
             a cutter in place of the usual cup-shaped abrasive
             stones, and requires 8 to 10 seconds to finish one ball-
             end pin of 30 mm diameter. The second attachment (Figure
             2) also works with a cutter, requires an auxiliary mo-
             tor, and finishes a 50 mm diameter ball in 0.5 minutes.
             The third attachment (Figure 3) is a universal attach-
             ment for complex inner and outer surfaces i.e. tapered,
             spherical and stepped. It can also be used for inner
Card 1/1   and outer threading. There are 3 sets of diagrams.

S/117/60/000/009/007/015
A004/A001

AUTHOR: Seminskiy, V. K.

TITLE: New Devices

PERIODICAL: Mashinostroitel', 1960, No. 9, pp. 19-20

TEXT: The author describes a number of new devices used for the boring
and reaming of apertures. 1) The adjustable boring bar suggested by the
author is composed of the body, hinged tool holder, micrometer screw and circlip.
The tool setting is effected by turning the screw which is graduated. Operation
tests with the boring of apertures of the 2nd and 3rd class of accuracy showed
that the boring bar described is not inferior in its rigidity to one-piece
boring bars, ensures a fast setting of the cutting tool and an accuracy up to
5μ. The author gives a detailed description of the design and operation of
the new boring bar. 2) An adjustable countersink reamer makes it possible to
break up a large allowance in three parts, using two cutting tools for rough
boring and the third tool for the finishing operation. 3) A description is
given of an adjustable boring head for the boring of large apertures. The three
tool holders with cutting tools are set individually by a screw. 4) The author

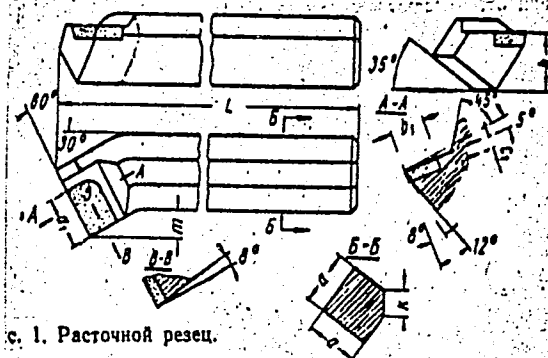Card 1/2

AUTHOR: Seminskiy, V. K.

TITLE: Boring of High Rigidity

PERIODICAL: Mashinostroitel', 1961, No. 1, pp. 22-23

TEXT: A boring tool designed by the
author has been devised to eliminate the
usual deficiencies of such tools, viz. the
impossibility of removing chips of large
cross sections at high cutting speeds due
to a decreasing precision and strong
vibrations arising during the cutting
operation. The new boring tool, shown in
Figure 1, over all its length is of square
cross section. But when the tool is
clamped on the special rest, shown in
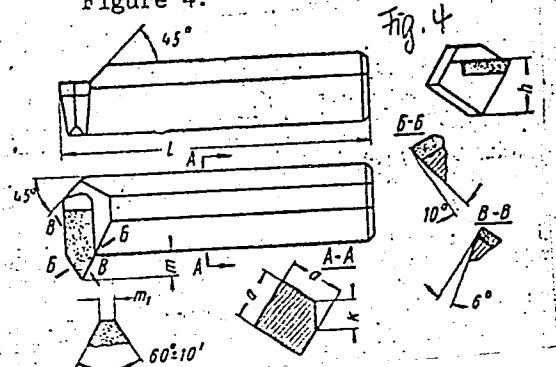Figure 2, one of the diagonal sections of
the tool is placed at an angle of 10° to

Figure 1:

с. 1. Расточной резец.

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Boring Tools of High Rigidity

Figure 4:

Fig. 4

Figure 5:

Fig. 5

tools several times faster than boring
tools of ordinary design. There are
5 figures and 4 tables.
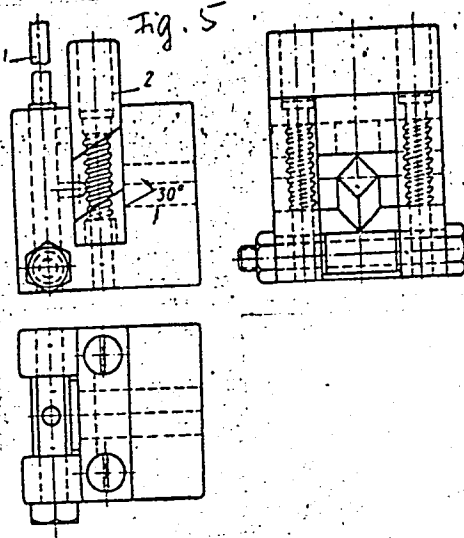
Card 3/3

SEMINSKIY, Vitaliy Kupriyanovich; VASILENKO, M.A., red.; GORKAVENKO, L.I.,
tekhn. red.

[Attachments for machining on lathes] Prisposobleniia dlia tokar-
nykh rabot. 2. dop. izd. Kiev, Gos. izd-vo tekhn. lit-ry USSR,
1961. 96 p.   (MIRA 14:10)
                        (Lathes—Attachments)

SEMINSKIY, V.K.

      Highly rigid boring tools. Mashinostroitel' no.1:22-23 Ja '61.

                                                  (MIRA 14:3)

               (Metal-cutting tools)

SEMINSKIY, V.K.

New attachments for machining on lathes. Mashinostroitel' no. 4:25-26
Ap '61.   (MIRA 14:4)
                  (Lathes—Attachments)

SEMINSKIY, V.K.; KHANOKH, P.M.; BORODIN, I.V.

    Pneumatic clamping device for mechanical vises. Stan,i instr. 32
    no.7:37 Jl '61.   (MIRA 14:6)
                        (Vises)

S/117/61/000/009/003/004
A004/A101

AUTHOR: Seminskiy, V.K.

TITLE: Labor gifts on the occasion of the Party Congress

PERIODICAL: Mashinostroitel', no. 9, 1961, 33 - 34

TEXT:-   In a foreword by the periodical editor it is pointed out that the Kiyev turner and innovator V.K. Seminskiy has developped tens of advanced fix- tures facilitating the operators' work, and that he has, from the very beginning of this periodical, been one of the most active collaborators. In this article the author describes a number of fixtures which, as it is stated, are his con- tribution to the XXII Party Congress. He describes a draw-in collet chuck for lathes which uses the pneumatic drive of the tail stock spindle and, in contrast to similar designs, makes it possible to machine bar-material without the spindle hole being obstructed by any pull rod. The self-aligning sleeve developed by the author is characterized by the property that, when being fixed in the steady, it aligns itself concentrically relative to the steady jaws and the lathe axis. To avoid damage to the wedges and mandrel when the latter is removed from the spind- le, the author suggests a stripper which makes it possible to carry out this ope-
........are

Card 1/2

SEMINSKI, V. K.

New devices for turning. Mashinostroene 10 no.10:26-27 O '61.

SEMINSKIY, V.K., tokar:

      Seven new attachments. Mashinostroitel' no.4:19-21 Ap '62.

                                                   (MIRA 15:5)

      1. Kiyevskiy zavod "Krasnyy ekskavator".
                  (Machine tools--Attachments)

SEMINSKIY, Vitaliy Kupriyanovich, tokar'-novator; NEVSKIY, B.N., inzh.,
        retsenzent; VASILENKO, M.A., inzh., red.izd-va; STARODUB, T.A.,
        tekhn. red.

        [Cutting thread on lathes]Narezanie rez'by na tokarnykh stankakh.
        Kiev, Gostekhizdat USSR, 1962. 74 p.   (MIRA 16:2)
                        (Screw cutting)

SEMINSKIY, V.K.

      Universal readjusting attachment for lathes. Mashinostroitel'
      no.1:20-21 Ja '63.   (MIRA 16:2)
                   (Lathes—Attachments)

SEMINSKIY, V.K.

The self-gripping carrier plate. Ratsionalizatsiia no.10:22 '62.

SEMINSKIY, Vitaliy Kupriyenovich; RUDNIK, S.S., doktor tekhn.
nauk, retsenzent

[Attachments for machining on lathes] Prisposobleniia
dlia tokarnoi obrabotki. Kiev, Tekhnika, 1964. 129 p.
(MIRA 17:12)

ARTOBOLEVSKIY, I.I., akademik; BALEZIN, S.A., zasluzhennyy deyatel' nauki RSFSR,
doktor khim.nauk, prof.; GROMOV, A.A., laureat Leninskoy premii,
deputat Verkhovnogo Soveta SSSR; YEGOROV, B.S., deputat Verkhovnogo
Soveta RSFSR, zasluzhennyy izobretatel' RSFSR; SEMINSKIY, V.K.,
tokar', deputat Verkhovnogo Soveta UkrSSR, laureat Gosudarstvennoy
premii, zasluzhennyy izobretatel' UkrSSR.

Readers' rostrum. Izobr.i rats. no.4:36-37 '64. (MIRA 17:4)

1. Direktor Pervogo gosudarstvennogo podshipnikovogo zavoda imeni
L.M.Kaganovicha (for Gromov). 2. Zavod "Krasnyy ekskavator" (for
Seminskiy).

SEMINSKIY, V.K.

Improved attachments. Mashinostroitel' no.6:19-23 Je '64.
(MIRA 17:8)

1. Predsedatel' Kiyevskogo soveta novatorov.

SEMINSKIY, V.K.

Controlled face cutters with mechanical fastening of many-sided plates. Mashinostroitel' no.8:26 Ag '64.   (MIRA 17:10)

SEMINSKIY, V.K.; VOL'SKIY, V.S., inzh., red.

[Increasing labor productivity in machining on lathes]
Povyshenie proizvoditel'nosti truda pri rabote na to-
karnykh stankakh. Izd.2., perer. i dop. Moskva, Ma-
shinostroenie, 1965. 102 p.   (MIRA 18:2)

SEMINSKIY, Zh.V.

Tectonics of the western slopes of the Akitkan Range (northwestern Lake Baikal region). Geol. i geofiz. no.3:172-175 '65.

(MIRA 18:6)

SEMINSKIY, Zh.V.

Role of primary dispersion halos in the study of faulting in
the Aga Paleozoic field. Geol. rud. mestorozh. 7 no.3:1C4-107
My-Je '65.   (MIRA 18:7)

1. Sosnovskaya ekspeditsiya, Irkutsk.

L 24573-66   JKT/JT

ACC NR: AN6010526   (A, N)   SOURCE CODE: UR/9023/65/000/096/0002/0002

AUTHOR: Semiokhin, I.

ORG: none

TITLE: Soviet armed forces. Materials for political training in DOSAAF clubs

SOURCE: Sovetskiy patriot, 1 Dec 65, p. 2, cols. 1-7.

TOPIC TAGS: armed force organization, air defense missile, air to ground attack, ground weapon, naval weapon, naval aircraft, nuclear submarine, airborne weapon

ABSTRACT: The article gives general information on the organizational structure of the Soviet Armed Forces. The control of the Armed Forces is vested in a single high command headed by the Soviet Defense Ministry. The control of party political work and political training of military personnel within the Armed Forces is carried out by the Main Political Directorate of the Soviet Army and Navy. Commanding generals of military districts and commanders of naval fleets are in charge of controlling military districts and fleets through their headquarters and a number of directorates. Military districts and fleets have military councils. Political directorates of military districts and fleets carry out party and political training of military personnel in units and ships. The Strategic Rocket Troops have been established as a new independent branch of the Soviet Armed Forces. They are armed with intercontinental medium- and long-range missiles equipped with nuclear warheads. They are

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L 24573-66

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ACC NR: AN6010526

the decisive instruments of the Supreme Command. Radical changes took place in the organization of the Air Defense Forces of the country. Basic missile weapons are capable of destroying aerial targets with the first missile. The basic fire power of the Ground Forces is also missile weapons. The author notes a significant increase in the combat capabilities of artillery, tanks, and airborne troops. The Soviet Air Force has become stronger. Bombers armed with nuclear missiles are now capable of destroying targets at great distances from their bases. The role of the Soviet Navy has greatly increased. It has been supplemented with nuclear submarines armed with nuclear weapons capable of destroying enemy ships at sea and of delivering surprise nuclear attacks upon enemy bases. [NT]

SUB CODE: 15/   SUBM DATE: none/

Card   2/2   BK

Semiokhin I A

PANCHENKOV, G.M.; SEMIOKHIN, I.A.; MAURINA, A.G.; YERSHOVA, N.P.

Separation of the stable hydrocarbon isotopes by counter current chemical exchange in the gaseous phase. Part.1 [with English summary in insert].Zhur.fiz.khim. 30 no.9:2070-2076 S '56.

(MLRA 9:12)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Carbon--Isotopes)

PANCHENKOV, G.M.;SEMIOKHIN, I.A.;AKISHIN, P.A.

Chemistry of isotope separation. Vest. Mosk. un. Ser. mat., mekh.,
astron. fiz., khim. 12 no. 6:199-214 '57.   (MIRA 11:10)

1. Kafedra fizicheskoy khimii Moskovskogo gosudarstvennogo
universiteta.
(Isotopes)

PANCHENKOV, G.M.; SEMIOKHIN, I.A.; RENZAYEVA, A.A.; MOLCHANOV, V.V.;
KALASHNIKOV, O.P.

Separation of stable isotopes by chemical substitution (with
summary in English). Zhur. fiz. khim. 31 no.6:1352-1358 Je '57.
(MIRA 10:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Nitrogen—Isotopes)   (Substitution (Chemistry))

SEMIOKHIN, I.A.

76-10-8/34

AUTHORS: Panchenkov, G.M., Semiokhin, I.A., Kalashnikov, O.P.

TITLE: Separation of Stable Nitrogen Isotopes according to the Chemic-
              al Exchange Method.II. (Razdeleniye stabil'nykh izotopov azota
              metodom khimicheskogo obmena. II.)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1957, Vol. 31, Nr 10, pp. 2224-2228
              (USSR)

ABSTRACT: The influence of the flow velocity and the temperature on the
              separation of the nitrogen isotopes is investigated in a con--
              ter flow column according to the reaction

$$N^{15}H_{3(r)} + N^{14}H_4NO_{3(p-p)} \rightleftarrows N^{14}H_{3(r)} + N^{15}H_4NO_{3(p-p)} .$$

              It is shown that the time for obtaining a stationary state is
              reduced with the flow velocity and the temperature rise. It is
              detected that an optimum flow velocity (solution inlet, return
              of the ammonia into the column resp.) exists under the condi-
              tions prevailing in the device. At this optimum current veloci-
              ty the maximum separation of the nitrogen isotopes is obtained.
              It is shown that the total coefficient of the isotope concen-
              tration is reduced at an increase of temperature from 20° to
Card 1/2 40° (in all flow velocities investigated here) in order to

5(4)   SCV/76-33-7-39/40

AUTHORS: Gerasimov, Ya. I., Topchiyeva, K. V., Semiokhin, I. A.,

TITLE: Georgiy Mitrofanovich Panchenkov. On the Occasion of His 50th
              Birthday

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 7,
              pp 1674 - 1675 (USSR)

ABSTRACT: On April 24, 1959 G. M. Panchenkov, a well-known Soviet specia-
              list in physical chemistry and Professor at the Moskovskiy
              institut neftekhimicheskoy i gazovoy promyshlennosti im. I. M.
              Gubkina and Moskovskiy gosudarstvennyy universitet (Moscow In-
              stitute for Petroleum-Chemical and Gas Industry imeni I. M. Gub-
              kin and Moscow State University), celebrated his 50th birthday.
              The main fields with which he was concerned are the kinetics of
              heterogeneous catalytic processes, the methods of separating
              and analyzing isotopes, and the theory of the liquid phase. His
              investigations of the mechanism of the transformation of hydro-
              carbons on aluminum silicate catalysts by the use of deuterium
              as a marking atom as well as his publications on the theory of
              viscosity are especially worth mentioning. For the latter he was
Card 1/2   awarded the Stalin Prize for the field of sciences in 1952. The

Georgiy Mitrofanovich Panchenkov, On the Occasion   SOV/76-33-7-39/40
of His 50th Birthday

method of separating boron isotopes devised by G. M. Panchenkov
et al was demonstrated at the Vsesoyuznaya promyshlennaya vystav-
ka (All-Union Industrial Exposition) and was awarded a diploma
of the second class, this method also has won general apprecia-
tion at international expositions in Geneva, Leipzig, Peking,
and Warsaw. Professor G. M. Panchenkov, who is also a teacher,
founded the Kafedra fizicheskoy i kolloidnoy khimii (Chair of
Physical and Colloid Chemistry) at the above-mentioned Institute
as well as the Laboratoriya khimii i razdeleniya izotopov v MGU
(Laboratory for Chemistry and Isotope Separation at Moscow State
University), which have been headed by him up to this day.   2
dissertations for the degree of Doctor and 15 dissertations for
the degree of Candidate were completed under his supervision.
He published 2 monographs, about 1oo scientific articles, and
obtained 1o patents for his inventions. G. M. Panchenkov is a
member of the International Committee for Constants. Furthermore,
he was awarded the orders "Krasnaya Zvezda" and "Znak Pocheta"
as well as the title of Laureate of the Stalin Prize. There is
1 figure.

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21(5)   SOV/76-33-9-7/37

AUTHORS: Semiokhin, I. A., Panchenkov, G. M., Korovkin, V. K.,

TITLE: Separation of Oxygen Isotopes in the Process of Electro-
                synthesis of Ozone

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 9, pp 1933-1938
                (USSR)

ABSTRACT: The equilibrium constant of the reaction of isotope exchange
                $2 O_3^{16} + 3 O_2^{18} \rightleftarrows 2 O_3^{18} + 3 O_2^{16}$ (1) in a silent electric dis-
                charge was calculated in the Laboratoriya khimii i razdeleniya
                izotopov MGU (Laboratory of Chemistry and Isotope Separation
                of MSU) by means of the approximation method by V. M. Tatevskiy
                (Ref 1), it amounts to 1.174 at 20°C. In order to determine
                the dependence of the distribution of the oxygen isotopes on
                the duration of   gas in the discharge zone, on the length
                of the ozonizer, on the method of ozone concentration, and on
                the way of taking samples, investigations were performed by
                means of a special device (Fig 1) made of molybdenum glass.
                The oxygen was conducted through a system to be purified and
Card 1/3   dried and was then introduced into the ozonizer. The ozone

SOV/76-33-9-7/37

Separation of Oxygen Isotopes in the Process of Electrosynthesis of Ozone

concentration of the oxygen-ozone mixture was measured and the ozone was adsorbed in silica gel to be either analyzed by means of a mass spectrograph or (in multistage investigations) was dissociated by heat-treatment and was again converted into ozone in the ozonizer. The pressure was measured by means of an ionization thermocouple vacuummeter type VIT-1 or by a Hg-manometer respectively. The current supply of the ozonizer was accomplished by a sound-frequency generator type ZG-2A and a translation amplifier type TU-500-3, by the use of a trans-former of the type OM-6. The current intensity of the ozonizer was measured by means of a "Mul'titset" type Ts-312, the voltage being measured by means of a static voltmeter type S-96. The ozone concentration was determined iodometrically, the analysis of the isotope composition of the oxygen was performed by means of the apparatus type MS-3. The factor of the specific energy U/v permitting the comparison of the performance efficiency of electrochemical processes as shown by experiments in the Laboratoriya kataliza i gazovoy elektro-khimii MGU (Laboratory of Catalysis and Gas Electrochemistry of the MSU) this factor was applied to the analysis of measur-

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SOV/76-33-9-7/37

Separation of Oxygen Isotopes in the Process of Electrosynthesis of Ozone

ing results in relation to the concentration coefficient S. It was observed that a steady state in the isotope exchange between oxygen and ozone is reached for $U/v = 2wh/l$ that means in about 1 second. The enrichment of ozone with O^{18} depends practically neither on the length of the ozonizer nor on the method of ozone-concentration nor on the sample taking. Values of 1.08 to 1.10 for S were obtained by one-stage investigations in ozonizers of different lengths (20-65 cm) at 20°C and 750 torr. The following scientists were mentioned: Ye. N. Yeremin, S. S. Vasil'yev and N. I. Kobozev. There are 6 figures and 4 references, 3 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
                (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: February 13, 1958

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21.3200
21(5)

66875

SOV/76-33-11-46/47

AUTHORS: Semiokhin, I. A., Panchenkov, G. M., Zhurov, Yu. A.

TITLE: New Data on the Application of the Isotope Exchange Between CO_2 and $CO_3^=$ for the Separation of the Isotopes of Carbon and Oxygen

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 11, pp 2633-2635 (USSR)

ABSTRACT: The separation of the carbon isotopes according to the bicarbonate method is difficult, because of the low degree of solubility of CO_2 in salt solutions, which was also proved by the experiments of N. N. Tunitskiy et al (Ref 2). The solubility of CO_2 in bicarbonate solution can be increased by the addition of organic solving agents which mix with water. Experiments were made with the addition of 5% of methanol or 5% of acetone to a 20% potassium bicarbonate solution. The column (2 m high and 16 mm in diameter) was filled with a synthetic aluminum silicate catalyst (16.0% of Al_2O_3) and the bicarbonate solution was passed through at a rate of 4.0 ± 0.1 ml/minute. The experimental results (Fig 1) show that the addition of methanol has no influence on the separation of the carbon isotopes, while an in-

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SOV/76-33-11-46/47

New Data on the Application of the Isotope Exchange Between CO_2 and CO_3 for the Separation of the Isotopes of Carbon and Oxygen

crease of the general separation coefficient was achieved with acetone. The experiments of Urey et al (Ref 5) showed that this was not achieved with pure acetone. Investigations have still to be carried out on the side-reaction CO_2 + acetone $\longrightarrow$ acetone.CO_2; acetone.$C^{12}O_2$ + $C^{13}O_2$ $\rightleftarrows$ acetone.$C^{13}O_2$ + $C^{12}O_2$.

The isotope exchange in the system CO_2 - HCO_3 - CO_3 is recommended for the concentration of the isotope O^{18}. Since a worker of the laboratory of V. K. Korovkin according to the method of Bigeleisen (Ref 6) calculated the constant of equilibrium of the reaction

$$3CO_2^{16} + 2CO_3^{=18}\text{ solution} \rightleftarrows 3CO_2^{18} + 2CO_3^{=16}\text{ solution}$$

to be K_{293} = 1.42, it could be assumed that O^{18} will accumulate in the gas-phase. The separation coefficient calculated with the equation of A. I. Brodskiy (Ref 7) is α_{293} = 1.06. Carbon dioxide was used

Card 2/3   as initial substance, a 12.4% KOH-solution served as absorption

SEMIOKHIN, I.; PANCHENKOV, G.M.; ZHUROV, Yu.A.

Separation of carbon isotopes by the bicarbonate method. Vest. Mosk.
un. Ser. 2: Khim. 15 no.5:6-12 S-O '60.   (MIRA 13:11)

1. Moskovskiy gosudarstvennyy universitet, kafedra fizicheskoy
khimii.
(Carbon—Isotopes)   (Isotopes—Separation)

80225

S/076/60/034/04/12/042
B010/B009

5.1310

AUTHORS: Kobozev, N. I., Semiokhin, I. A., Sindyukov, V. G. (Moscow)

TITLE: Physico-chemical Investigation of the Electrosynthesis of
             Concentrated Hydrogen Peroxide From Its Elements. I. Kinetics
             of the Electrosynthesis of H_2O_2

PERIODICAL: Zhurnal fizicheskoy khimii, 1960, Vol. 34, No.4, pp. 773-781

TEXT: The present paper contains data obtained by investigating the electro-
synthesis of H_2O_2 at the MGU (MSU) between 1947 and 1950. The influence of
temperature upon the H_2O_2 yield and concentration in the case of a synthesis
in a silent electric discharge was investigated. For this purpose a laboratory
plant (Fig. 1) was designed, containing a reaction vessel which consisted of
three cylinders placed inside one another. The reaction vessel had a volume of
200 cm^3, an operating area of 700 cm^2, and was charged with alternating current.
The composition of the initial gas mixture was determined by means of a VTI
gas analyzer. The experimental results obtained at temperatures ranging from

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SEMIOKHIN, I.A., PANCHENKOV, G.M. AND KOROVKIN, V.K.

"Zur Trennung der Isotope des Sauerstoffs bei der Elektrosynthese des Ozons."

Report presented at the 2nd Conf. on Stable Isotopes.
East German Academy of Sciences, Inst. of Applied Physical Material
Leipzig, GDR   30 Oct - 4 Nov 1961

S/076/61/035/007/018/019
B124/B231

AUTHORS: Korovkin, V. K., Semiokhin, I. A., Panchenkov, G. M., Jui Shih-chuag

TITLE: Separation of oxygen isotopes in the electrosynthesis of ozone

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 7, 1961, 1648 - 1650

TEXT: It has been discussed by the authors at an earlier occasion (Ref. 1: I. A. Semiokhin, G. M. Panchenkov, V. K. Korovkin, A. V. Borisov, Zh. fiz. khimii, 33, 1933, 1959) that the steady state in the separation of oxygen isotopes sets in long before the equilibrium ozone concentration is attained. The concentration turned out to be about equal to that found as a result of investigations carried out under different conditions (different values of the specific energy U/v, different dimensions of ozonizers, different methods of ozone accumulation and sampling), and showed to be independent of the concentration of the ozone obtained. The present work engages in changing the conditions so as to attain the isotope equilibrium and the concentration coefficient at changed pressure- and temperature ratios in the system. The investigation was carried out in a

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Separation of oxygen isotopes in...

S/076/61/035/007/018/019
B124/B231

device described in Ref. 1, that is, in a reactor of 600 mm length provided with a 1 mm wide spark gap. The discharge power was determined from the volt-ampere characteristic with the aid of the equation $U = V_c(I_{av} - I_{cr})$ derived by Yu. V. Filippov and Yu. M. Yemel'yanov (Ref. 2: Zh. fiz. khimii, 31, 896, 1957; 33, 1042, 1959), where I_{av} is the mean value of the current flowing through the ozonizer, I_{cr} the mean value of the current in case of a critical terminal potential in the ozonizer, and V_c the amplitude value of the ignition voltage discharge. The effect of pressure was studied in the range 300 - 900 mm Hg with the walls of the ozonizer exhibiting a temperature of 20°C. The mean concentration coefficient was constant within the test errors, and is computed from the equation $S_{mean} = 1.100 \pm 0.013$, where 0.013 is the mean error; in more than 75% of the tests, the mean error was smaller and equal to 0.010. The steady state in the process of isotopic exchange would be attained if the values of U/v were close to one which corresponds, in our case, to a duration of the gas in the discharge of 1 - 2 seconds. The

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Separation of oxygen isotopes in ...

S/076/61/035/007/018/019
B124/B231

equilibrium ozone concentration will be attained only in case that the U/v-values exhibit an energy of 5 -8 watts/l.hr and increases when pressure is raised (Fig. 2). Five series of tests were carried out at a wall temperature varying between -19 and +92°C and constant pressure of 760 mm Hg. The results obtained showed that a rise in temperature causes the concentration coefficient to increase (Fig. 3). A temperature rise in the reactor causes a considerable drop of the ozone concentration. The data obtained indicate that the separation of oxygen isotopes in the electro-synthesis of ozone is not determined by the exchange of oxygen isotopes between oxygen and synthesized ozone, but directly by the formation of ozone from oxygen. Indicative of this is the independence of the distri-bution coefficient S on the duration of oxygen in the discharge zone and the relatively high experimental value of S (about 1.10 at room-temperature) as compared with the equilibrium values of S for the exchange reaction (S = 1.03), for the computation of which the method of statistical thermo-dynamics was applied. There are 3 figures, 1 table, and 2 Soviet-bloc references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova, (Moscow State University imeñi M. V. Lomonosova)

Card 3/5

SEMIOKHIN, I.A.; KOROVKIN, V.K.; PANCHENKOV, G.M.; ZHUY SHI-CHZHUAN
[Jui Shih-chuang]

Separation of oxygen isotopes by the exchange CO_2 - H_2O
in an electric discharge. Zhur.fiz.khim. 35 no.8:1881-1883
Ag '61.   (MIRA 14:8)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.
                 (Oxygen—Isotopes)
                 (Carbon dioxide)
                 (Water)

28295 S/076/61/035/010/014/015
B106/B110

26.1610 (also 1208)

AUTHORS: Pitskhelauri, Ye. N., Semiokhin, I. A., and Kobozev, N. I.

TITLE: Reaction of hydrogen with oxygen in a silent electric
             discharge. II. Effect of specific energy and time of
             experiment

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 10, 1961, 2383 - 2386

TEXT: The authors studied the effect of the specific energy and the reac-
tion time on the reaction of hydrogen with oxygen in a silent electric
discharge. The experimental arrangement consisted of a reaction tube, a
device for mixing the gases, a purification system, a current source for
the reaction tube, and a measuring system. The reaction tube is described
in detail and explained in the thesis by I. A. Semiokhin (Ref. 1: Kand.
dis., MGU, 1952, str. 91). It had a cylindrical shape, and the electrodes
were arranged coaxially. The inner electrode was made of aluminum
(99.7% Al), had an outside diameter of 34 mm, and was cooled with water.
The reaction zone was 900 mm long and had a volume of 614 cm^3 with an

active electrode surface of 4466 cm^2. Electrolytic hydrogen and oxygen

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28295 S/076/61/035/010/014/015
B106/B110

Reaction of hydrogen with...

were used for the experiments. The oxygen concentration in the initial mixture was varied from 2 to 5% by volume, which corresponds to 33 - 83% of the explosive concentration in a hydrogen-oxygen mixture. A gas analyzer of the ВТИ (VTI) system was used to check the gas dosage. The current source was a ЗГ-2А (ZG-2A) audio-frequency generator with a ТУ-5-1 (TU-5-1) amplifier unit. The velocity of the water stream cooling the reaction tube was measured with an РС-5 (RS-5) rotameter. The power of the tube was calculated by the continuous "calorimetric" method described by S. S. Vasil'yev and Ye. N. Yeremin (Ref. 3: Uch. zap. MGU, 86, kn. 2, 68, 1946). The values of the specific energy u/v, i.e., the ratio of the power of discharge to the flow rate of the gas mixture through the tube, was varied in the experiments from 0.22 to 5.22 w per liter of gas mixture and per hour. The u/v ratio is very useful for comparing the efficiencies of various types of discharge which differ in power. A table shows the results of the determinations. The useful oxygen consumption γ is found to increase from 0.42 to 0.80 if the specific energy u/v is reduced from 5.22 to 0.24 w/liter/hr. The total oxygen consumption Δ decreases simultaneously from 0.92 to 0.21. The portion α of oxygen consumed for the formation of H_2O_2 passes through a maximum with a change of the

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Reaction of hydrogen with...   28295S/076/61/035/010/014/015
B106/B110

specific energy, and reaches 0.40 at u/v = 3.56 w/liter/hr. Figs. 3 and 4
show the changes of Δ, α, and γ in the glass-aluminum tube applied. In a
glass tube, the corresponding values of α and γ are somewhat higher, as
the aluminum electrode exerts a less favorable influence upon the value of
γ. It may be seen from the Table that the values of α and γ decrease if
the experiment is shortened. This decrease is explained by the decomposi-
tion of H_2O_2 at the aluminum electrode with additional passivation of the
latter. If the experiment takes a long time, the portion of H_2O_2 consumed
for the passivation of the electrode is negligible. When the experiment
takes one hour or more, the values of α and γ are hardly affected any
longer by the time of experiment. A continuous process is therefore useful
in a glass-metal tube, as the useful oxygen consumption is thereby in-
creased. There are 4 figures, 1 table, and 5 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
        (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: February 21, 1961

Card 3/5

29988
S/076/61/035/011/012/013
B101/B110

II.1190

AUTHORS: Semiokhin, I. A., Pitskhelauri, Ye. N., Kobozev, N. I., and
Sindyukov, V. G.

TITLE: Interaction of hydrogen with oxygen during silent electric
discharge. III. Effect of gas mixture composition and
electrode material

PERIODICAL: Zhurnal fizicheskoy khimii, v. 35, no. 11, 1961, 2633 - 2635

TEXT: The authors checked the differing publication data giving 96 - 97% H_2 + 4 - 3% O_2 and 80% H_2 + 20% O_2 as optimum for the yield of H_2O_2 during the reaction of H_2 with O_2 in silent discharge. Initial experiments with a change of the O_2 content from 60 - 80% to 2 - 3% showed that the useful consumption γ of O_2 strongly drops in explosive O_2 + H_2 mixtures. Determination of optimum composition at u/v = const was made (a) with 3 - 3.5% O_2; (b) with 4.2 - 5.2% O_2. Experiments were conducted in glass-aluminum reaction tubes as described by the authors in Zh. fiz.

Card 1/A3

29988
S/076/61/035/011/012/013
Interaction of hydrogen with oxygen...   B101/B110

khimii, 35, no. 10, 1961. The effect of admixtures (Ar, N_2, H_2O) and of all-glass reaction tubes, as well as nickel-plated or brass-plated electrodes, was investigated. Data are given in a table. It was found that: (1) at low concentrations Ar plays the part of an energetic catalyst; (2) N_2 greatly lowers the useful consumption of O_2; the H_2O_2 solution is strongly acid through nitrogen oxides developing; (3) heating of the electrodes to 70 - 72°C $\left(p_{H_2O} = 100\,mm\,Hg\right)$ increased the oxygen

consumption α for the formation of H_2O_2 as compared with the α for dry gas mixtures at equal temperature; (4) α and β are highest in all-glass reaction tubes, higher than in glass-aluminum reaction tubes. A strong decrease of α and β occurred in the case of nickel-plated or brass-plated electrodes. There are 1 table and 9 references: 2 Soviet and 7 non-Soviet. The two references to English-language publications read as follows: E. Noack a. O. Nitzschke, US Patent 1890793; L. Dawsey, US Patent 2169996 of May 15, 1936.

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29988

Interaction of hydrogen with oxygen...   S/076/61/035/011/012/013
                                            B101/B110

ASSOCIATION: Moskovskiy Gosudarstvennyy universitet im. M. V. Lomonosova
              (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: February 21, 1961

Legend to the Table: (1) Number of experiment; (2) composition of initial
gas mixture, % by volume; (3) admixtures; (4) velocity of gas flow,
m^3/hr; (5) specific energy, w/liter/hr; (6) part of oxygen, consumed for
the formation of H_2O_2, $\star$; (7) total consumption of initial oxygen, Δ; (8)
useful consumption of oxygen, $\gamma = \star/\Delta$; (a) mm Hg; (b) without water;
$\star$ reduced to standard conditions; $\star\star$ carried out in all-glass reaction
tube; $\star\star\star$ experiments 111, 112, 144, 143 conducted with Al inner electrode
cooled to 6°C and Pyrex outer electrode heated to 50°C; $\star\star\star\star$ concentration
of H_2O, given in mm Hg.

Card 3/X̶

Interaction of hydrogen...

31186
S/076/61/035/012/006/008
B101/B138

are 4 figures, 1 table, and 2 Soviet references.

ASSOCIATION: Moskovskiy Gos. universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: February 21, 1961

Table, Legend: (A) No. of experiment; (B) composition of initial gas mixture; (C) rate of gas flow, m^3/hr; (D) specific energy U/v, w/liter/hr; (E) Percentage yield from O_2 passed through, $\%$; (F) efficiency of oxygen; (a) atm. gage pressure; (b) ma; (c) kv; (d) current frequency; (e) cps; (f) w.

Card 2/3

43781

G/025/62/000/004-5/002/005
I041/I241

AUTHORS: Semiochin, I.A., Pancenkov, G.M., and Korovkin, V.K.

TITLE: The separation of oxygen isotopes during the electro-synthesis of Ozone

PERIODICAL: Kernenergie, no.4-5, 1962, 300-303

TEXT: The isotope feactionation of oxygen isotopes between oxygen and ozone during rhe electrosynthesis of ozone was investi-gated as a function of the flow velocity, the length of the ozonizing tube, the gas pressure and wall temperature, with a view of utilizing the electric discharge conditions for the rapid attainment of isotopic equilibrium between species for the purpose of isotope production. Stationary isotopic fractionation was established much faster than the attainment of stationary ozone concentration; the isotope frac-tionating factor between ozone and oxygen was found to increase from

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G/025/62/000/004-5/002/005
I041/I241

The separation of oxygen isotopes...

1.03 at -19°C to 1.13 at 92°C, and was independent of the ozone
concentration and of the total pressure and of the length of the
ozonizer. Because of these facts and since the experimental separa-
tion factor is much larger than the calculated equilibrium value for
the exchange between ozone and oxygen, the author concludes that the
observed effect is a kinetic one. No conclusive quantitative assign-
ment of the reaction step responsible for the enrichment is given,
but it is suggested that the separation is due to a combined isotope
effect on electrodissociation reaction of the O_2 and O_3 molecules.
There are 5 figures.

ASSOCIATION: Stable Isotope Laboratory of the State University of
               Moscow.

SUBMITTED: Paper presented at the 2nd Stable Isotope Conference,
               Leipzig, October 30, - November 4, 1961

Card 2/2

SEMIOKHIN, I.A.; SERENKOVA, A.G.

Using water-acetone potassium bicarbonate solutions for the separation
of carbon isotopes. Vest.Mosk. un. Ser:khim. 17 no.1:39-43 Ja-F
'62.   (MIRA 15:1)

1. Moskovskiy gosudarstvennyy universitet, kafedra khimicheskoy
khimii.
                    (Carbon—Isotopes)

SEMIOKHIN,I.A.; AGEYEV, Ye.P.; PANCHENKOV, G.M.; SMIRNOV, B.I.

Separarion of oxygen isotopes by the thermodiffusion method.
Zhur. fiz. khim. 36 no.1:124-129 Ja '62.   (MIRA 16:8)

1. Moskovskiy gosudarstvennyy universitet im. Lomonosova.
        (Oxygen—Isotopes)   (Diffusion)

//. /220
//. 6/00

32636
S/076/62/036/001/006/017
B101/B102

AUTHORS: Semiokhin, I. A., Kobozev, N. I., and Pitskhelauri, Ye. N.

TITLE: Reaction of hydrogen with oxygen in silent electric
             discharge. V. Kinetic analysis of the process according
             to equations of irreversible consecutive reactions of
             the first order

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 1, 1962, 72-80

TEXT: The purpose of this study was to ascertain whether the reaction of
H_2 with O_2 in a silent electric discharge satisfies the system of
equations for consecutive reactions: $H_2 + O_2 \longrightarrow H_2O_2$; $H_2O_2 \longrightarrow H_2O + O$.
In a silent electric discharge the process is irreversible owing to the
low current density, energy, etc. Since the O_2 content of the gas
mixture was kept at 5 % to prevent explosions, it may be assumed that
$[H_2]$ = const. Previous papers of N. I. Kobozev et al. (Zh. fiz. khimii,
$\underline{34}$, 773, 1960; ibid., $\underline{35}$, 2382 and 2633, 1961) suggest the existence of

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Reaction of hydrogen with oxygen...

bimolecular reactions, in which the role of the second particle in the activation process is played by electrons or ions with a concentration dependent on the energy supply. This is indicative of the existence of a reaction of the first order. For the reaction $O_2 \xrightarrow{k_1} H_2O_2 \xrightarrow{k_2} H_2O$ one obtains $d\Delta/dt = k_1^O(1 - \Delta)$, where Δ denotes the total consumption of O_2. It follows therefrom that $k_1^O = (1/t)\ln\left[1/(1 - \Delta)\right]$;

$\Delta = 1 - \exp(-k_1^O t)$ (6). The formation of H_2O is described by $d(\Delta - \alpha)/dt = k_2^O \alpha$, where α is the portion of H_2O_2 that does not decompose. Substitution of Δ from Eq. (6) furnishes the solution

$\Delta - \alpha = 1 - \left[k_2^O/(k_2^O - k_1^O)\right] \exp(-k_1^O t) - \left[k_1^O/(k_2^O - k_1^O)\right] \exp(-k_2^O t)$ (9).

By subtracting Eq. (6) from Eq. (9) one finds $\alpha = \left[k_1^O/(k_1^O - k_2^O)\right]\left[\exp(-k_2^O t) - \exp(k_1^O t)\right]$. For $d\alpha/dt = 0$ one obtains $t_{max} = (\ln k_1^O - \ln k_2^O)/(k_1^O - k_2^O)$ for the time of maximum accumulation of H_2O_2. Substitution of U/v for t furnishes Δ and α as functions of energy. k_2^O was graphically determined

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Reaction of hydrogen with oxygen...

32636
S/076/62/036/001/006/017
B101/B102

from $(U/v)_{max} k_2^O - 2.3 \log k_2^O = C$; $C = (U/v)_{max} k_1^O - 2.3 \log k_1^O$. The values calculated therefrom for α^O of all-glass reaction vessels are in good agreement with experimental data. For reaction vessels made of metal and glass one obtains $\alpha_{exp} < \alpha^O$. There are 5 figures, 6 tables, and 4 references: 3 Soviet and 1 non-Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: August 11, 1960

Card 3/3

33694
S/076/62/036/002/005/009
B119/B101
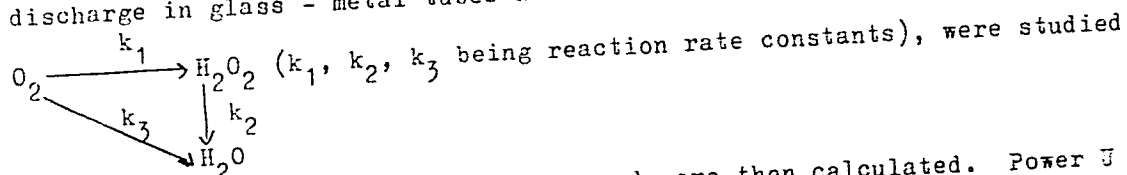
//. /2.20
//. //0⁵
//. //90
AUTHORS: Semiokhin, I. A., Kobozev, N. I., and Pitskhelauri, Ye. N.
(Moscow)

TITLE: Interaction of hydrogen and oxygen during a silent electric discharge. VI. Kinetic analysis of the process from the equations for irreversible parallel-consecutive reactions of first order

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 2, 1962, 336 - 344

TEXT: The kinetics of the processes which take place during a silent discharge in glass - metal tubes according to

$$O_2 \xrightarrow{k_1} H_2O_2 \quad (k_1, k_2, k_3 \text{ being reaction rate constants}), \text{ were studied}$$

with k_3 and k_2 leading to H_2O

under completely different conditions and were then calculated. Power J of discharge: 10 to 1458 watts, current intensity: 3.5 to 425 ma, voltage:
Card 1/3

33694

S/076/62/036/002/005/009

Interaction of hydrogen and oxygen...   B119/B101

6 to 15 kv, current frequency: 50 to 8500 cycles, rate v of flow of the
gas mixture: 1 - 1400 liters/hr, degree of total oxygen consumption:
0.03 - 1.0, effective oxygen consumption: 0.06 - 1.0, H_2O_2 concentration
in the gaseous phase expressed in parts of the initial oxygen
concentration: 0.02 - 0.52. The reaction follows the scheme of an
irreversible parallel-consecutive reaction of first order. The constants
calculated as functions of the specific energy, are independent of
changes of experimental conditions. For the quantitative calculation of
such reactions in the gaseous phase from kinetic equations, it is therefore
possible to substitute U/v for t (time). The process taking place in the
gaseous phase is caused by the discharge and corresponds to the formation
and subsequent decomposition of H_2O_2. The immediate formation of H_2O
from hydrogen and oxygen is independent of the discharge and is due to
the catalytic effect of the electrode metal. This side reaction can be
eliminated by the use of ozone generators made of glass only, or by
electrodes consisting of 100% Al. (When using 99.7% Al, the rate constant
k_3 of this reaction is 0.12, with 99.99% Al it is 0.08). There are 5
figures, 2 tables, and 3 Soviet references.
Card 2/3

S/076/62/036/003/001/011
B101/B108

/1. 11=20
/1. 1190

AUTHORS: Kobozev, N. I., Semiokhin, I. A., and Pitskhelauri, Ye. N.

TITLE: Interaction of hydrogen with oxygen in a corona discharge.
            VII. The mechanism of the process

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 3, 1962, 443 - 448

TEXT: On the basis of previous experimental and theoretical work (Zh. fiz.
khimii, 35, 2633, 1961; 36, 72, 336, 1962) the positive catalytic action
of water vapor and argon on the formation of H_2O_2 and ozone is discussed.
Using Ar as a catalyst offers the following advantages over water vapor:
(1) no high temperature is required; this facilitates the design of the
reaction vessel, (2) the hazard of an explosion of the mixture $H_2 + O_2$ is
minimized, (3) the same quantity of Ar can circulate continuously because
condensation does not occur. To explain the catalytic action of Ar the
authors discuss the change of the reaction constants in $O_2 \xrightarrow{k1} H_2O_2$ and
$H_2O_2 \xrightarrow{k2} H_2O$ by a value $r = f(C_{Ar})$ assuming $r_1 = r_2 = r$, $r_1 < r_2$, and $r_1 > r_2$.

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Interaction of hydrogen ...

S/076/62/036/003/001/011
B101/B108

The equations $r_1 = \varphi_1/(C_{Ar} + \xi)$, where ξ is independent of C_{Ar}, $r_2 = \varphi_2 C_{Ar}$, and $\varphi_1 = \varphi_2 = \varphi = r$ yield results in good agreement with the experimental data: $\Delta_{Ar} = 0.291$; $\Delta_{exp} = 0.296$ and $\alpha_{Ar} = 0.126$; $\alpha_{exp} = 0.173$. The negative effect of nitrogen is explained by competitive reactions (formation of NH_3 or NO). Some aesthetic relations are given for the mechanism of the reaction of H_2 and O_2 in a corona discharge, which are based on the reaction of atomic H_2 with free or surface adsorbed O_3. The following reactions are possible: $H_2 + e \rightarrow H + H^*$; $e + S \rightarrow e_{ads} \cdot S$ (S - surface area of the wall); $O_2 + e_{ads} \cdot S \rightarrow O_{2ads}^- \cdot S$; $O_3 + e_{ads} \cdot S \rightarrow O_{3ads}^- \cdot S$; $H + O_{2ads}^- \cdot S \rightarrow H\text{-}O\text{-}O_{ads}^- \cdot S$; $H + O_{3ads}^- \cdot S \rightarrow H\text{-}O\text{-}O\text{-}O_{ads}^- \cdot S$; $H + O_3 \rightarrow H\text{-}O\text{-}O\text{-}O-$; $H\text{-}O\text{-}O\text{-}O- + H_2 \rightarrow H_2O_2 + OH$; $H\text{-}O\text{-}O\text{-}O- + H \rightarrow H_2O_2 + O$; $H + HO_{3ads}^- \cdot S \rightarrow H_2O_2 + O_{ads}^- \cdot S$; $H_2 + HO_{3ads}^- \cdot S \rightarrow H_2O_2 + OH_{ads}^- \cdot S$. There are 8 references: 7 Soviet and 1 non-Soviet. The reference to the English-language

Card 2/3

Interaction of hydrogen ...   S/076/62/036/003/001/011
                                      B101/B108

publication reads as follows: British Patent 300282 (February 12, 1927).

ASSOCIATION: Moskovskiy universitet im. M. V. Lomonosova (Moscow Universi-
              ty imeni M. V. Lomonosov)

SUBMITTED: August 1', 1961

Card 3/3

KOBOZEV, N.I.; SEMIOKHIN, I.A.; PITSKHELAURI, Ye.N.

Interaction of hydrogen with oxygen in a silent electrical discharge. Part 7. Zhur. fiz. khim. 36 no.3:443-448 Mr '62.
(MIRA 17:8)

1. Moskovskiy universitet imeni Lomonosova.

SEMIOKHIN, I.A.; PANCHENKOV, G.M.; KOROVKIN, V.K.

Oxygen isotope separation in the electrosynthesis of ozone.
Part. 2. Zhur. fiz. khim. 36 no.11:2561-2563 N'62.
(MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

ACCESSION NR: AT4028328   S/0000/63/000/000/0023/0029

AUTHOR: Kobozev, N. I.; Semiokhin, I. A.; Pitskhelauri, Ye. N.

TITLE: Electrosynthesis of pure concentrated hydrogen peroxide

SOURCE: Soveshchaniye po khimii perekisny*kh soyedineniy. Second, Moscow, 1961.
Khimiya perekisny*kh soyedineniy (chemistry of peroxide compounds); Doklady*
soveshchaniya. Moscow, Izd-vo AN SSSR, 1963, 23-29

TOPIC TAGS: electrosynthesis, hydrogen peroxide, ozonizer, ozone, argon, glass,
quartz, aluminum

ABSTRACT: In this paper the authors conduct a study of the effect of phydical-
chemical parameters on the process of electrosynthesis of hydrogen peroxide from
elements, for the purpose of explaining the optimal conditions for obtaining pure
concentrated hydrogen peroxide. The investigation was conducted with ozonizers of
different types and sizes. The effect of the temperature, flow velocity, composition
and pressure of gas mixture, magnitude of discharge and the electrode material on
the material and energy yields of hydrogen peroxide were studied. A schematic of
the installation is given. Graphs of the results are presented. It was found that
a temperature drop in the ozonizer affects an increase in yield and concentration

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ACCESSION NR: AT4028328

of hydrogen peroxide. Additives of argon in small concentrations (about 1%), or·water
vapor lead to an increase in material and energy yields of hydrogen peroxide. Glass,
quartz, and aluminum with a purity of more than 99.7% are ·recommended as suitable
materials· for ozonizer electrodes. An increase of pressure up to 2 atmospheres
shows no effect on the energy and material yield of hydrogen peroxide. An increase·
up to 3 atmospheres causes a decrease in the yield and concentration of hydrogen
peroxide. It appears that as a result of changing the power and productivity of the
ozonizer, the most characteristic parameter for comparing the effectiveness of the
discharge action is the magnitude of the specific energy U/v (kilowatt/meter^3/hr)
with the decrease of which the energy yield and concentration of hydrogen peroxide
increases. Orig. art. has: 5 figures.

ASSOCIATION: Moskovskiy gosudartsvenny*y universitet im. M.V. Lomonosova (Moscow
State University) · ·.

SUBMITTED: 13Dec63   DATE ACQ: 06Apr64   ENCL: 00

SUB CODE: CH   NO REF SOV: 006   OTHER: 005

Card 2/2

ACCESSION NR: AT4028329

S/0000/63/000/000/0030/0037

AUTHOR: Semiokhin, I. A.; Kobozev, N. I.; Pitskhelauri, Ye. N.

TITLE: The kinetics and mechanism of electrosynthesis of hydrogen peroxide

SOURCE: Soveshchaniye po khimii perekisny*kh soyedineniy. Second, Moscow, 1961. Khimiya perekisny*kh soyedineniy (chemistry of peroxide compounds); Doklady* soveshchaniy. Moscow, Izd-vo AN SSSR, 1963, 30-37

TOPIC TAGS: kinetics, electrosynthesis, hydrogen peroxide, water vapor, argon, oxygen, ozone

ABSTRACT: The authors claim that the kinetics of electrosynthesis of hydrogen peroxide in an all-glass reactor are satisfactorily described by equations of sequential irreversible reactions of the first order. Electrosynthesis of H_2O_2 in glass-metal reactors is in accordance with the scheme of parallel sequential irreversible reactions of the first order. The actual electro-gas processes, dependent on the existing regime in the discharge, are in fact formation and dissociation reactions of hydrogen peroxide. It is found that water vapor and particularly argon are actually energy catalysts of the electrosynthesis of hydrogen peroxide which under predetermined conditions accelerate one formation reaction of hydrogen

Card 1/2

ACCESSION NR: AT4028329

peroxide. The authors discuss the mechanism of hydrogen peroxide formation in which a substantial role is ascribed to the dissociation of hydrogen molecules and the formation of an "electron bedding" on the walls of the reactor which increase sharply the absorption potential of oxygen. Such a "bedding" may replace the cold wall necessary for the formation of hydrogen peroxide. The possibility of inter- action of the hydrogen atoms with ozone on the "electron bedding" as well as in the gaseous phase is also considered. Orig. art. has: 19 formulas, 1 table and 3 figures.

ASSOCIATION: Moskovskiy gosudartsvenny*y universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 13Dec63   DATE ACQ: 06Apr64   ENCL: 00

SUB CODE: CH   NO REF SOV: 007   OTHER: 003

Card2/2

ACCESSION NR: AP3001604   S/0189/63/000/003/0029/0032

AUTHORS: Semiokhin, I. A.; Panchenkov, G. M.; Korovkin, V. K.

TITLE: Utilization of ozone electrosynthesis in the concentration of the rare
oxygen isotope O-18

SOURCE: Moscow. Universitet. Vestnik. Seriya 2, Khimiya, no. 3, 1963, 29-32

TOPIC TAGS: electrosynthesis, ozone electrosynthesis, O-18 isotope, oxygen
isotope, oxygen isotope concentration, ozonizer, ozone concentration, molecular
ozone redistribution, molecular oxygen redistribution, isotope redistribution,
oxygen isotope redistribution velocity

ABSTRACT: A short report was delivered at the All-Union Universities Conference
on Ozone, MGU, May 1960. The purpose of this study was to determine the relation
between the separation coefficient and the velocity of oxygen isotope separation
(with respect to the time interval during which oxygen remained in the electrical
discharge zone, to length of the reactor, to pressure, to temperature, and to the
procedure of ozone accumulation and sampling). Maximum ozone concentration was
9-10 vol % (at 20C and 760 mm Hg). The isotope composition analysis was conducted
with the MS-3 mass-spectrometer. The specific energy factor u/v (ratio of

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ACCESSION NR: AP3001604

electrical discharge intensity to volume velocity of the gas-mixture stream) was used as a similarity criterion for the comparison of the effectivity of the processes observed. It was established that: 1) the isotope redistribution process reached its stationary state before the stationary ozone concentration was attained; 2) the ozone enrichment in O-18 was independent of the length of the ozonizers and of specific energy (it remained at 1.08-1.10 at all values of u/v); 3) the coefficient of the O-18 isotope enrichment grew with the increase in temperature from -19 to +92C; 4) the isotope effect was not observed during adsorption and desorption of ozone from silica gel. Orig. art. has: 4 figures and 6 formulas.

ASSOCIATION: Moskovskiy universitet. Kafedra fizicheskoy khimii (Moscow University, Department of Physical Chemistry)

SUBMITTED: 29Sep61   DATE ACQ: 09Jul63   ENCL: 00

SUB CODE: PH, CH   NO REF SOV: 009   OTHER: 006

Card 2/2

SEMIOKHIN, I.A.; LYKOVA, L.K.

On certain properties of water-acetone solutions of potassium
bicarbonate and carbon dioxide. Vest. Mosk. un. Ser. 2: Khim.
18 no.5:26-28 S-O '63.   (MIRA 16:11)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

SEMIOKHIN, I.A.; LYKOVA, L.K.; SERENKOVA, A.G.

Use of water-acetone solutions of potassium bicarbonate for
separating carbon isotopes. Part 2. Vest. Mosk. un. Ser. 2:
Khim. 18 no.5:29-31 S-O '63.   (MIRA 16:11)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

SEMIOKHIN, I.A.; ANDREYEV, Yu.P.; PANCHENKOV, G.M.

Separation of oxygen and carbon isotopes in dissociation of CO_2 in the silent electrical discharge. Zhur. fiz. khim. 37 no.12: 2782-2783 D '63.   (MIRA 17:1)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 10678-65   EWT(1)/EPA(w)-2/EEC(t)/EWA(m)-2   Pab-24   ASD(a)-5/AEDC(b)/
AEDC(a)/AFWL/SSD/AFTC(p)
ACCESSION NR: AP4047646   S/0189/64/000/005/0040/0046

AUTHORS: Semiokhin, I. A.; Andreyev, Yu. P.; Panchenkov, G. M.

TITLE: The effect of impurities on the dissociation of carbon dioxide gas in silent discharge

SOURCE: Moscow. Universitet. Vestnik. Seriya 2. Khimiya, no. 5, 1964, 40-46

TOPIC TAGS: dissociated gas, combustion dissociation, electric discharge

ABSTRACT: This paper describes the effects of He, A, N_2, O_2, and CO on the kinetics of CO_2 dissociation during electrical discharge. The actual experiments are to be described in a subsequent paper. The experimental method has been previously described by the authors (Zh. fiz. khimii, 38, 2088, 1964). Impurity concentrations were varied from 4.8 to 60% (giving rise to pressure changes from 15 to 450 mm Hg). The total pressure was varied from 315 to 750 mm Hg. Increase in impurity content (except for He) gave increased disruptive voltage of combustion. The addition of He caused no change in this voltage, apparently because He requires

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L 10678-65

ACCESSION NR: AP4047646

no energy in the presence of CO_2. At a fixed pressure, the combustion voltage decreased with increase in He and A concentration, but remained constant with increase in N_2, O_2, and CO. The degree of CO_2 dissociation (equilibrium) decreased from 37.7% with no He impurity to 20.7% in the presence of 60% He (when the total initial pressure of the gas mixture was 750 mm Hg). Change in CO_2 pressure (without impurity) from 300 to 750 mm Hg led to a similar change in degree of dissociation. The authors discovered a significant fact: the expenditure of energy during dissociation of 1 mole CO_2 (on attaining steady state without impurities) depends weakly on the pressure. It amounts, in arbitrary units for this experiment, to 5-6 v hrs for each percent of CO that forms, reduced to normal conditions, or to 2.1-2.5 v hrs for each mm Hg of CO that forms. The experimental results show that the addition of O_2 and CO to the initial gas mixture leads to a decrease in degree of CO_2 dissociation at the equilibrium-steady state and to a decrease in the equilibrium constant. This is apparently due to a decline in temperature in the discharge zone because of loss of some energy during excitation of the O_2 and CO molecules, energy that is not then used in the dissociation of CO_2. The addition of inert constituents at constant pressure should not change the degree of CO_2

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L 10678-65

ACCESSION NR: AP4047646

dissociation. In an electrical discharge, the useless or the energetically useful consumption of energy leads to decrease or increase in degree of CO_2 dissociation, and this must be related to rise or fall in temperature of the CO_2 gas in the system. Orig. art. has: 8 figures, 1 table, and 11 formulas.

ASSOCIATION: Moskovskiy universitet (Moscow University)

SUBMITTED: 04Apr64   ENCL: 00

SUB CODE: ME   NO REF SOV: 008   OTHER: 000

Card 3/3

SEMIOKHIN, I.A.; PANCHENKOV, G.M.; SALIMOVA, K.M.; ANDREYEV, Yu.P.

Isotope exchange between carbon dioxide and its ethanolamine solutions. Vest. Mosk. un. Ser. 2:Khim. 19 no.1:35-38 Ja-F '64.
(MIRA 17:6)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

SEMIOKHIN, I.A.; ANDREYEV, Yu.P.; PANCHENKOV, G.H.

Effect of additions on the dissociation of carbon dioxide in
silent discharge. Vest. Mosk. un. Ser. 2. Khim. 19 no.5:40-
46 S-O '64.   (MIRA 17:11)

1. Kafedra fizicheskoy khimii Moskovskogo universiteta.

ANDREYEV, Yu.P.; SEMIOKHIN, I.A.; PANCHENKOV, G.M.; PARAYEV, V.V,

Dissociation of carbon dioxide in the silent electric discharge.
Zhur. fiz. khim. 38 no.3:794-797 Mr '64.   (MIRA 17:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

ANDREYEV, Yu.P.; SEMIOKHIN, I.A.; PANCHENKOV, G.M.

Redistribution of oxygen and carbon isotopes between carbon dioxide and the products of its dissociation in a silent electric discharge. Zhur. fiz. khim. 38 no.4:1032-1035 Ap '64.
(MIRA 17:6)

1. Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova.

L 21335-65   EWT(m)/EWP(e)/EWP(t)/EWP(b)   Pq-4   ESD(gs)/DIAAP/IJP(c)
JD/WH

ACCESSION NR: AP4044449   S/0076/64/038/008/2072/2076

AUTHOR: Semiokhin, I. A.; Korovskin, V. K.; Panchenkov, G. M.;
Bakhchevanskii, Kh. S.

TITLE: Study of isotope effects during dissociation of carbon dioxide in a glowing
electrical discharge

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 8, 2072-2076

TOPIC TAGS: oxygen isotope, carbon isotope, carbon dioxide, isotope enrich-
ment, mass spectrometry, glowing discharge

ABSTRACT: Isotope exchange during dissociation of carbon dioxide in a glowing
discharge was investigated. To determine the direction and order of this reaction
as a function of experimental conditions, experiments were conducted on the appa-
ratus shown in figure 1 of the enclosure. The reactor was constructed from mo-
lybdenum glass and electrodes--from copper. The diameter of the electrodes was
10 mm. The electrodes were water cooled during operation. Mass spectrometric

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L 21335-65
ACCESSION NR: AP4044449

analyses of the decomposition products were conducted on the MKh-1302 instru-ment. For each sample mass spectra were recorded 5-6 times. In each speci-men the intensities of ionic peaks were recorded which would correspond to the following molecular masses: $C^{12}O^{16}O^{18}$, $C^{13}O_2^{16}$, $O^{16}O^{18}$, $C^{12}O^{18}$ and $C^{12}O^{16}$. In the course of the reaction O^{18} and C^{13} were accumulated in CO_2 and O_2 and C^{12} and O^{16} in CO. Upon change of discharge current from 100 to 600 ma for all investigated pressures (30, 50 and 100 mm) the enrichment coeffi-cient in CO_2 with respect to O^{18} and C^{13} remains practically constant and rep-resents 1.022±0.007 and 1.020±0.008. If the initial pressure is lowered from 100 to 30 mm the degree of dissociation of CO_2 increases from 8 to 80% (at low currents) and the magnitude of enrichment coefficients in the oxygen-CO_2 system increases from 1.057 and 1.090. The article presents a material isotope balance scheme, which enables the control of the quality of experiments and analyses. Orig. art. has: 4 figures and 2 tables

ASSOCIATION: Khimicheskiy fakul'tet Moskovskogo gosudarstvennogo universite-ta im. M. V. Mendeleyeva (Chemistry Department,   Moscow State Universi-ty)

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L 21335-65

ACCESSION NR: AP4044449

SUBMITTED: 30Jul63   ENCL: 01   SUB CODE: GC, IC
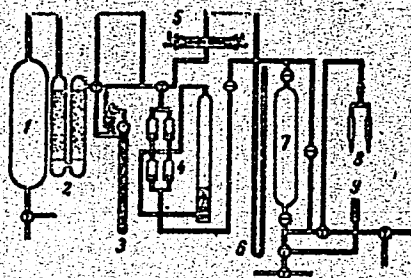
NR REF SOV: 005   OTHER: 005

Card 3/4

fig. 1 apparatus

1. receiving reservoir, 2. drying towers, 3. flow meter, 4. circulation pump,
5. reactor, 6. mercury manometer, 7. tank for sampling, 8. ampules,
9. pressure gauge LT-2

Card 4/4

AUTHOR: Semiokhin, I. A.; Andreyev, Yu. P.; Panchenkov, G. M.

TITLE: Dissociation of carbon dioxide in a silent electric discharge during circu-
lation

ABSTRACT: This work is concerned with the dissociation of CO_2 in a silent
electric discharge as a function of pressure of gas, temperature of the walls of
the ozonizer and the strength of the discharge. The experimental set-up is
shown in fig. 1. The dimensions of the ozonizer are as follows: the gap for pas-
sage of gas--1 mm, the volume of the reaction zone--40 cm^3. The pressure was
measured by means of a u-shaped mercurial manometer. The degree of dissocia-
tion of CO_2 was calculated by measuring the pressure in the system: $\alpha =$
$2(p-p_0)p$ where p_0 is the initial pressure and p is the final pressure in the system.
Since the apparatus pressure changed, only one parameter was maintained cons-

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L 16631-65
ACCESSION NR: AP4044450

tant--current. The active strength of the discharge was determined from current voltage characteristics, taken at different pressures of the system and temperatures of the walls of the ozonizer. The investigation was made of the degree of dissociation of CO_2 as a function of the strength of electric discharge at 100, 300, 500 and 700 mm of Hg initial pressures at 5, 20, 47 and 87° C. It was shown that stationary dissociation equilibrium is essentially independent of the temperature of ozonizer, it changes very little with pressure and is greatly dependent of the strength of the discharge. The maximum degree of dissociation was obtained at 300 mm pressure (α = 34%). Orig. art. has: 7 figures.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 29Jul63   ENCL: 01

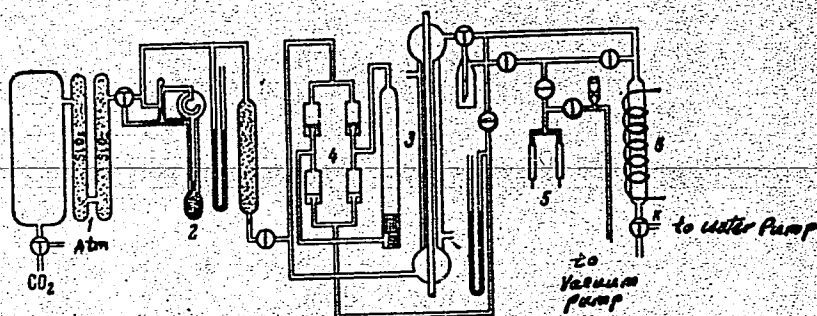SUB CODE: GC   NO REF SOV: 004   OTHER: 000

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fig. 1

Apparatus: 1--drying column, 2--rheometer, 3--ozonizer, 4--circulation pump, 5--ampules, 6-- furnace for decomposition of ozone and oxidation

Card   3/3

L-16670-65   EWT(m)   PB-4   DIAAP   S/0076/64/038/008/2087/2091

ACCESSION NR: AP4044452

AUTHOR: Andreyev, Yu. P.; Semiokhin, I. A.; Panchenkov, G. M.   B

TITLE: Redistribution of oxygen and carbon isotopes between carbon dioxide and its dissociation products in a silent electric discharge during circulation of gas

SOURCE: Zhurnal fizicheskiy khimii, v. 38, no. 8, 1964, 2087-2091

TOPIC TAGS: isotope exchange, oxygen, carbon, carbon dioxide, carbon mono-xide, silent electric discharges, isotope enrichment

ABSTRACT: The purpose of this work was to investigate the redistribution of oxygen and carbon isotopes between CO_2 and its dissolution products in a silent electric discharge in a flow apparatus. The experimental part of this work was the same as used previously by these authors I. A. Semiokhin, Yu. P. Andreyev and G. M. Panchenko, Zh. Fiz. Khimii, 38, 2088 (1964) . The experiments were conducted with an ozonizer at temperatures of 5, 20, 47 and 87C. At every temperature the initial pressure of CO_2 was varied from 100 to 700 mm of Hg.

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L 16670-65
ACCESSION NR: AP4044452

The power of the discharge was varied from 4-8 to 70-100 watts. For every power of the discharge there exists a stationary equilibrium volume of the enrichment coefficient. The calculated separation coefficients are independent of the power of the discharge, temperature of the walls of the ozonizer and initial pressure. It is shown that in a silent discharge during circulation CO_2 is enriched in C^{13} and O^{18} and CO is depleated of these isotopes. The produced oxygen is also enriched in O^{18} for which the coefficient is equal to 1.173 ± 0.014. Orig. art. has: 5 figures and 1 table

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 08oct63   ENCL: 00

SUB CODE: GC   NO REF SOV: 004   OTHER: 000

Card 2/2

SEMIOKHIN, I.A.; ANDREYEV, Yu.P.; PANCHENKOV, G.M.

Dissociation kinetics of carbon dioxide in the silent discharge.
Zhur. fiz. khim. 38 no.9:2275-2278 S '64.   (MIRA 17:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

L 34982-65   EWT(m)/T/EWP(t)/EWP(b)/EWA(c)   JD

S/0076/65/039/001/0190/0194

ACCESSION NR: AP5004360

AUTHOR: Semiokhin, I. A.; Andreyev, Yu. P.; Panchenkov, G. M.; Bayramov, V. T.

TITLE: Kinetics of the dissociation of carbon dioxide in a quiet electric discharge under gas circulation conditions

SOURCE: Zhurnal fizicheskoy khimii, v. 39, no. 1, 1965, 190-194

TOPIC TAGS: carbon dioxide, electric discharge, carbon monoxide, reaction kinetics, dissociation

ABSTRACT: The dissociation of CO_2 in a quiet discharge has been considered by these authors before (Zhur. fiz. khim, 38, 2076, 1964). Reversible equations of the first and the second order were used for kinetic analysis of the dissociation of CO_2 in a quiet discharge during circulation of the gas. It was shown that first order equations correspond more closely to the experimental data. Dissociation and recombination of CO_2 molecules are the result of electron collisions. The yield of CO as a function of specific energy is shown in Figure 1 of the Enclosure. The efficiency of chemical action of the discharge is independent of the discharge power in the 100-30 watt range, but it falls sharply when the discharge power is lowered from 30 to 4 watts. Dissociation and recombination rates

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L 34982-65
ACCESSION NR: AP5004360

for CO_2 were studied in relationship to the temperature of the walls of the ozonizer in which the experiments were conducted and the initial gas pressure in the system. Orig. art. has: 7 figures, 1 table and 23 equations.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University)

SUBMITTED: 07Jan64   ENCL: 01   SUB CODE: GC, IC

NO REF SOV: 003   OTHER: 000

Card 2/3

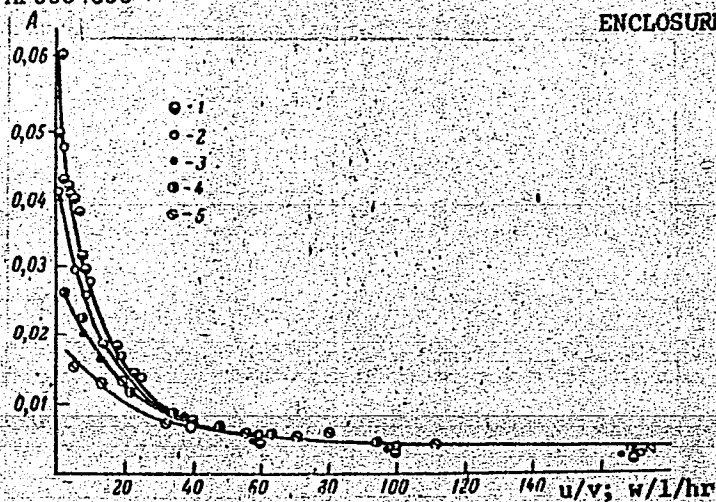L 34982-65

ACCESSION NR: AP5004360

ENCLOSURE: 01

Fig. 1. Energy yield of CO as a function of specific energy at various discharge powers: 1-4, 2-8, 3-16.7, 4-37, 5-70 watts (initial pressure = 300 mm Hg; temp of ozonizer--47° C)

Card 3/3

ANDREYEV, Yu.P.; SEMIOKHIN, I.A.; PANCHENKOV, G.M.

Oxidation kinetics of carbon monoxide in a silent electric
discharge. Zhur.fiz.khim. 39 no.10:2515-2519 O '65.
(MIRA 18:12)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.
Submitted August 1, 1964.

AUTHOR: Andreyev, Yu. P.; Semiokhin, I. A.; Panchenkov, G. M.; Utirov, B. U.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Oxidation kinetics of carbon monoxide containing additives in a silent discharge

TOPIC TAGS: oxidation kinetics, carbon monoxide, combustion modifier, nitrogen, argon, helium
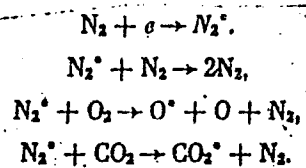
ABSTRACT: The mechanism of action of nitrogen, argon, and helium additives on the oxidation of carbon monoxide in a silent discharge has been studied. The experiments were carried out in a closed circulation system described earlier (I. A. Semiokhin, Yu. P. Andreyev, G. M. Panchenkov. Zh. Fiz. khimii, 38, 2076, 1964). The concentration of the additives varied from 4.8 to 60%, which corresponds to a change in the total initial pressure of 315 to 750 mm Hg. The initial pressure of the stoichiometric mixture of $CO + 1/2\ O_2$ was the same in all the experiments, viz., 300 mm Hg. The current was 38 mamp. A kinetic analysis of the CO oxidation reaction was carried out using equations for reversible first-order reactions. On the basis of the experimental data and the kinetic analysis, it was established that argon and helium are

Card 1/2   UDC: 541.124/.128+541.13

ACC NR: AP6032270

inert diluents, while nitrogen is an "energetic catalyst" of the CO oxidation reaction:

$$N_2 + e \rightarrow N_2^*.$$
$$N_2^* + N_2 \rightarrow 2N_2,$$
$$N_2^* + O_2 \rightarrow O^* + O + N_2,$$
$$N_2^* + CO_2 \rightarrow CO_2^* + N_2.$$

Orig. art. has: 6 figures and 6 formulas. [WA-68]

SUB CODE: 07, 21/ SUBM DATE: 02Apr65/ ORIG REF: 005/

Card 2/2

ACC NR: AP6032270   SOURCE CODE: UR/0076/66/040/009/2145/2149

AUTHOR: Andreyev, Yu. P.; Semiokhin, I. A.; Panchenkov, G. M.; Utirov, B. U.

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Oxidation kinetics of carbon monoxide containing additives in a silent discharge

SOURCE: Zhurnal fizicheskoy khimii, v. 40, no. 9, 1966, 2145-2149

TOPIC TAGS: oxidation kinetics, carbon monoxide, combustion modifier, nitrogen, argon, helium

ABSTRACT: The mechanism of action of nitrogen, argon, and helium additives on the oxidation of carbon monoxide in a silent discharge has been studied. The experiments were carried out in a closed circulation system described earlier (I. A. Semiokhin, Yu. P. Andreyev, G. M. Panchenkov. Zh. Fiz. khimii, 38, 2076, 1964). The concentration of the additives varied from 4.8 to 60%, which corresponds to a change in the total initial pressure of 315 to 750 mm Hg. The initial pressure of the stoichiometric mixture of CO + 1/2 O_2 was the same in all the experiments, viz., 300 mm Hg. The current was 38 mamp. A kinetic analysis of the CO oxidation reaction was carried out using equations for reversible first-order reactions. On the basis of the experimental data and the kinetic analysis, it was established that argon and helium are

Card 1/2   UDC: 541.124/.128+541.13

SEMIOKHIN, I. A.; PANCHENKOV, G. M.; ANDREYEV, Yu. P.; KOROVKIN, V. K.;

" Untersuchung der Kinetik und des Mechanismus der Isotopenverteiling bei der Dissoziation von Kohlendioxyd in elektrischen Entladungen"

Third Working Conference on Stable Isotopes 28 October to 2 November 1963, Leipzig.

SEMIOKHIN, I. A.; KOROVKIN, V. K.; PANCHENKOV, G. M.;

" Zur Frage des Mechanismus der Verteilung der Isotope des Sauerstoffs bei der Elektro-
synthese von Ozon"

Third Working Conference on Stable Isotopes 28 October to 2 November 1963, Leipzig.

BOCHAROV, N.G., polkovnik, redaktor-sostavitel'; SEMIOKHIN, I.S., pod-
polkovnik, redaktor-sostavitel'; KADER, Ya.M., redaktor
izdatel'stva; SRIBNIS, N.V., tekhnicheskiy redaktor

[Ways and means of protection from atomic weapons; a collection of
articles] Sredstva i sposoby zashchity ot atomnogo oruzhia; sbornik
statei. Izd. 2-oe, dop. Moskva, Voen.izd-vo Ministerstva obor.
SSSR, 1956. 124 p.   (MLRA 9:7)
          (Atomic warfare)

SEmiokhin, IS.

ZELENTSOV, A.A., polkovnik; KORSHUNOV, V.N., polkovnik; SEMIOKHIN, I.S.,
polkovnik; BELIKOV, M.A., podpolkovnik, redaktor; MEDNIKOVA, A.N.,
tekhnicheskiy redaktor.

[Political and educational work within the military unit; a collection
of articles] Politiko-vospitatel'naia rabota v podrazdelenii;
sbornik statei. Moskva, Voen.izd-vo M-va obor.SSSR, 1957. 195 p.
(Soldiers--Education, Nonmilitary)   (MIRA 10:11)